**THINGS TO KEEP IN MIND**

* **Use a dedicated charger (CC/CV)**
  + Never discharge a cell below 3V
  + Watch out for the thermal runaway (more heat -> higher T -> higher internal resistance -> more heat)
  + Set charge rate to 1C/2C
  + Lithium reacts with water (!) and oxygen (only when heated). LiO biulds up on the cathode and anode and risens the internal resistance.
* **Never use parallel charging of multiple cells!**
* **Serial charging is OK but cell balancing should be used.**

**POWER MANAGEMENT ARCHITECTURE**

12V 2A

DC Supply

CHARGER IC

MAIN CONTROLLER

Other VCOs

Passive balancer

BUCK CONVERTER

LiPo Pack

MOTOR DRIVERS

**POWER MANAGEMENT STATES**

**STATE – DISCHARGING – BATTERY LEVEL NORMAL**

Every system function is available. Battery can be fully loaded.

**STATE – DISCHARGING – BATTERY LEVEL ALMOST EMPTY**

A warning signal is displayed. Some current limits are imposed on the biggest loads (motors). The limits are put higher the more the battery is empty.

**STATE – DISCHARGING – BATTERY LEVEL EMPTY**

Almost every system function is disabled. A warning signal is displayed that the battery is empty and that it should be recharged.

**STATE – CHARGING**

No system function is enabled except charging and display of the charge level.

**STATE – CHARGING – BATTERY LEVEL NORMAL**

Same as state – charging, except the user is now prompted to remove the power supply.